

CLAIMS

We claim:

- 5 1. A method for modifying an optical medium, the medium having a plurality of operational characteristics, each operational characteristic having a predefined limit, comprising:
  - selecting a region of the medium to be modified; and
  - modifying the medium in the region according to a predefined limit of a first of the plurality of operational characteristics; and
  - 10 modifying the medium in the region according to a predefined limit of a second of the plurality of operational characteristics;
  - such that during a read operation of data stored in the modified region, the read operation is altered in the modified region as a result of the modifications.
- 15 2. The method of claim 1 wherein modifying the medium comprises modifying the medium to have a distortion of a size that is approximately the predefined limit of the operational characteristic for distortion size.
- 20 3. The method of claim 2 wherein the distortion is formed in a reading layer of the medium through which the optical path is directed.
- 25 4. The method of claim 2 wherein the distortion comprises an air bubble formed in the reading layer, a particle deposited in the reading layer, an indentation formed in an outer surface of the reading layer, or a convex feature formed in an outer surface of the reading layer.
5. The method of claim 2 wherein the distortion is formed in a reflective layer of the medium.

6. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have a distortion of a size that is approximately the predefined limit of the operational  
characteristic for distortion size and wherein the size of the distortion is based on the first  
size of a physical deformation and a second size of a local corresponding region of  
increased birefringence.

5

7. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have adjacent distortions that are spaced apart by a length that is approximately the  
predefined limit of the operational characteristic for length between adjacent distortions

10

8. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have a region of increased birefringence.

15

9. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have a refraction index value that is approximately at the predefined limits of the  
operational characteristic for range of acceptable refraction index values.

20

10. The method of claim 1 wherein modifying the medium comprises modifying the medium  
to have a reflection value that is approximately at the predefined limit of the operational  
characteristic for reflection value.

11. The method of claim 1 wherein the selected region comprises a data region or a pre-track  
region of a medium.

25

12. An optical medium having a plurality of operational characteristics, each operational  
characteristic having a predefined limit, the optical medium being modified in a modified  
region according to a predefined limit of a first of the plurality of operational  
characteristics; and the optical medium being modified in the modified region according  
to a predefined limit of a second of the plurality of operational characteristics, such that

5 during a read operation of data stored in the modified region, the read operation is altered in the modified region as a result of the modifications.

10 13. The optical medium of claim 12 wherein the medium is modified to have a distortion of a size that is approximately the predefined limit of the operational characteristic for distortion size.

15 14. The optical medium of claim 13 wherein the distortion is formed in a reading layer of the medium through which the optical path is directed.

20 15. The optical medium of claim 13 wherein the distortion comprises an air bubble formed in the reading layer, a particle deposited in the reading layer, an indentation formed in an outer surface of the reading layer, or a convex feature formed in an outer surface of the reading layer.

25 16. The optical medium of claim 12 wherein the distortion is formed in a reflective layer of the medium.

30 17. The optical medium of claim 12 wherein the distortion is of a size that is approximately the predefined limit of the operational characteristic for distortion size and wherein the size of the distortion is based on the first size of a physical deformation and a second size of a local corresponding region of increased birefringence.

18. The optical medium of claim 12 wherein the medium is modified to have adjacent distortions that are spaced apart by a length that is approximately the predefined limit of the operational characteristic for length between adjacent distortions

35 19. The optical medium of claim 12 wherein the medium is modified to have a region of increased birefringence.

20. The optical medium of claim 12 wherein the medium is modified to have a refraction index value that is approximately at the predefined limits of the operational characteristic for range of acceptable refraction index values.
- 5 21. The optical medium of claim 12 wherein the medium is modified to have a reflection value that is approximately at the predefined limit of the operational characteristic for reflection value.
- 10 22. The optical medium of claim 12 wherein the selected region comprises a data region or a pre-track region of a medium.

15

20

25